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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/624,865 | 07/22/2003 | Terry Joe Hanna | 6971CIP | 7652 |

29602 7590 04/14/2008

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| EXAMINER | |
|---|---|
| DEHGHAN, QUEENIE S | |
| **ART UNIT** | **PAPER NUMBER** |
| 1791 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 04/14/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/624,865 | HANNA ET AL. | |
| | Examiner | Art Unit | |
| | Queenie Dehghan | 1791 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *23 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-70,81 and 82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7,8,10,11,13,15,17,31-33,35,38,40,41,43,45,47,48,50,61-63,65,67,68,70,81 and 82* is/are rejected.

7)☒ Claim(s) *21,23-30,51 and 53-60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 2, 4, 6, 9, 12, 14, 16, 19, 22, 32, 34, 39, 42, 49, 52, 62, 81, and 82 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Regarding claims 2, 32, 62, 81, and 82, the claims recite “the screen is a first screen and a second screen is laying on top of the first screen”, wherein the first screen has a “hole area per unit screen area being different in some screen areas than other screen areas” as per claim 1. The specification describes an inventive screen that has varying hole areas in the screen, i.e. a lower hole area in the center portion and higher hole area in the end portions. Furthermore, the screen can be installed into a conventional bushing or laid on top of a "conventional screen". The conventional screen as depicted in the drawings has a uniform hole density. On the other hand, claim 2 recites a second screen lying on top of first screen. The first screen having a hole density that varies within the screen. This is not supported in the specification. In

the case where a second screen lays on top of a first screen, the first screen is a conventional screen with uniform hole density and not a varying hole density.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3, 5, 7, 8, 10, 11, 13, 15, 17, 18, 20, 31, 33, 35, 37, 38, 40, 41, 43-45, 47, 48, 50, 61, 63-65, 67, 68, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marra (4,612,027) in view of Hanna et al. (EP 1 193 225) and Harris (3,628,930). Marra discloses a bushing capable of receiving molten material from a bushing leg of a glass tank with two opposed side walls (11) and two end walls (12), a tip plate with orifices and tips extending from the lower surface of the tip plate (15),

wherein the tip plate is attached to the side walls and end walls and the bushing having a boxlike shape with at least four interior corners (figures 2-6, col. 2 lines 41-56, col. 3 lines 46-48, col. 4 lines 35-39).

7. Furthermore, the interior support structure cooperates with at least one sidewall, forming cells between the bottom of the screen and the top of the tip plate (figures 2-5, col. 4 lines 40-56). Marra also discloses a screen having a plurality of screen areas containing holes through the screen with a screen area above each of the cells, the hole areas per unit screen areas being different in some screen areas than in other screen areas, wherein the entire bottom of a screen (30) rest on top of an interior support structure (36), such that the screen is located so close to the top of the support structure that the distance from the bottom of the screen to the top of the support structure is less than that at which lateral flow of molten glass from cell to cell becomes significant (figure 4, col. 4 lines 5-44).

8. Although the screen of Marra has different hole areas, Marra do not specifically disclose a screen with a low flow central portion and high flow end portions. Harris discloses a screen used in bushing with a low flow rate central portion and one or more high flow rate portions adjacent the central portion and the walls of the bushing and closest to each corner, wherein the high flow portions have a greater hole area per unit screen area than the low flow rate portions as can be seen in figure 3 (col. 3 lines 41-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such a screen configuration to accommodate the different

temperature profiles of the bushing and molten glass throughout the bushing, as taught by Harris.

9. However, Marra fails to teach the number of orifices and tips in the tip plate. Also, although Marra teaches varying the placement of interior support structure Marra fails to specify forming 24 cells with intersecting supports and angles.

10. Hanna et al. teach of an interior support structure welded to a top surface of the tip plate for supporting the tip plate ([0033]). Additionally, the tip plate has at least 1600 orifices and hollow tips arranged in double rows ([0030], [0032]), for example, a bushing with 4030 tips ([0031]). Furthermore, the interior support structure is made of precious metal alloy and comprises a plurality of intersecting or crossing internal supports with angles between the intersecting supports at each intersection to form diamond shaped cells and attached to the sidewalls, end walls, and interior corners of the bushing and forming 47 cells located between the bottom of the screen and the top of the tip plate (figures 2, 4, and 5, [0033], [0035]). Hanna also discloses the bushing having linear external supports contacting the bottom of the tip plate ([0031]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the internal support structure of Hanna et al. in the bushing of Marra in order to offer efficient support of the tip plate while encountering hot molten glass, as taught by Hanna et al.

***Double Patenting***

11. Claim 1-2, 21, 31-32, 51, and 61-62 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-4, 7 and 34-

37 of U.S. Patent No. 7,194,875 in view of Marra (4,612,027) and Hanna et al. (EP 1 193 225). Claims 1, 31, and 61 in application '865, and claims 1 and 3-4 of the patent 7,194,875 claim a bushing comprising of at a least one side wall, a tip plate, and a screen mounted in the interior of the bushing and spaced above the top of tip plate, wherein the screen has a lower hole area per unit screen area in the central portion of the screen and higher hole area per unit screen in the end portions of the screen. However, application '836 and patent '875 do not disclose the shape of the bushing, a screen with varying screen areas and the location of the screen, the number of orifices in the tip plate, or an interior support structure. Marra discloses a bushing capable of receiving molten material from a bushing leg of a glass tank with two opposed side walls (11) and two end walls (12), a tip plate with orifices and tips extending from the lower surface of the tip plate (15), wherein the tip plate is attached to the side walls and end walls and the bushing having a boxlike shape with at least four interior corners (figures 2-6, col. 2 lines 41-56, col. 3 lines 46-48, col. 4 lines 35-39).

12. Furthermore, the interior support structure cooperates with at least one sidewall, forming cells between the bottom of the screen and the top of the tip plate (figures 2-5, col. 4 lines 40-56). Marra also discloses a screen having a plurality of screen areas containing holes through the screen with a screen area above each of the cells, the hole areas per unit screen areas being different in some screen areas than in other screen areas, wherein the entire bottom of a screen (30) rest on top of an interior support structure (36), such that the screen is located so close to the top of the support structure that the distance from the bottom of the screen to the top of the support structure is less

than that at which lateral flow of molten glass from cell to cell becomes significant (figure 4, col. 4 lines 5-44).

13. Additionally, claims 1 and 3-4 of the patent 7,194,875 recite a similar limitation of a screen with different screen areas and claim 34 recites the same limitation as claims 2, 32 and 62 of the pending application, wherein a second screen lay on top of a first screen.

14. Hanna et al. teach of an interior support structure welded to a top surface of the tip plate for supporting the tip plate ([0033]). Additionally, the tip plate has at least 1600 orifices and hollow tips arranged in double rows ([0030], [0032]), for example, a bushing with 4030 tips ([0031]). Furthermore, the interior support structure is made of precious metal alloy and comprises a plurality of intersecting or crossing internal supports with angles between the intersecting supports at each intersection to form diamond shaped cells and attached to the sidewalls, end walls, and interior corners of the bushing and forming 47 cells located between the bottom of the screen and the top of the tip plate (figures 2, 4, and 5, [0033], [0035]). Hanna also discloses the bushing having linear external supports contacting the bottom of the tip plate ([0031]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the internal support structure of Hanna et al. in the bushing of Marra in order to offer efficient support of the tip plate while encountering hot molten glass, as taught by Hanna et al.

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the interior support structure of Hanna et al. and the box

shape bushing with the location of the screen in the bushing of the bushing of Marra in the bushing of the copending applications '863 and '683 to provide for a more uniform temperature for the molten glass supplied to the tip plate and to offer efficient support of the tip plate while encountering hot molten glass, as taught by Hanna et al.

***Allowable Subject Matter***

16. Claims 2, 32, 62, 66, and 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art teaches using two screens in a bushing wherein one screen is located above another and the two screens have different densities of holes per area of screen. However, the prior art fail to teach laying one of the screen on top of the other screen. More specifically, the prior art fails to teach laying a screen that has a different hole area per unit screen in some area of the screen than in other screen areas on top of another screen.

17. Claims 21, 23-30, 51, and 53-60 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: Although the prior teaches a screen with a greater hole density at end portions of a screen and a lower hole density at the central portion of the screen, it fails to disclose the combination of a higher hole density of between 10-16% and a lower hole density of 2.5-6%.

18.

### *Response to Arguments*

19. Applicant's arguments, filed January 23, 2008 have been fully considered but they are not persuasive.

20. Regarding the applicant's argument for 112 rejection of claims 2, 32 and 62, the applicant argues that the specification supports laying a second screen on a first screen, wherein the two screen have different hole area. It appears there has been a misunderstanding. The 112 rejection directed more towards the first screen. The specification indicates that the first screen is a conventional screen, when a second screen is involved. This is in contrary to the claim that states the first screen has different hole densities.

21. Regarding the applicant's arguments for Marra's teachings of a screen with a high flow rate and low flow rate sections, a new rejection has been presented.

22. The applicant's arguments regarding the double patenting rejection are not persuasive. Patent 7,194,875 was not used teach placing a screen on internal supports, but instead Marra teaches this. Similarly, Hanna teaches the interior supports welded to the tip plate to support the tip plate.

### *Conclusion*

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Q Dehghan

/Eric Hug/
Primary Examiner